Status quo of Pacific bluefin tuna *Thunnus orientalis* seed production in Amami station of NCSE FRA

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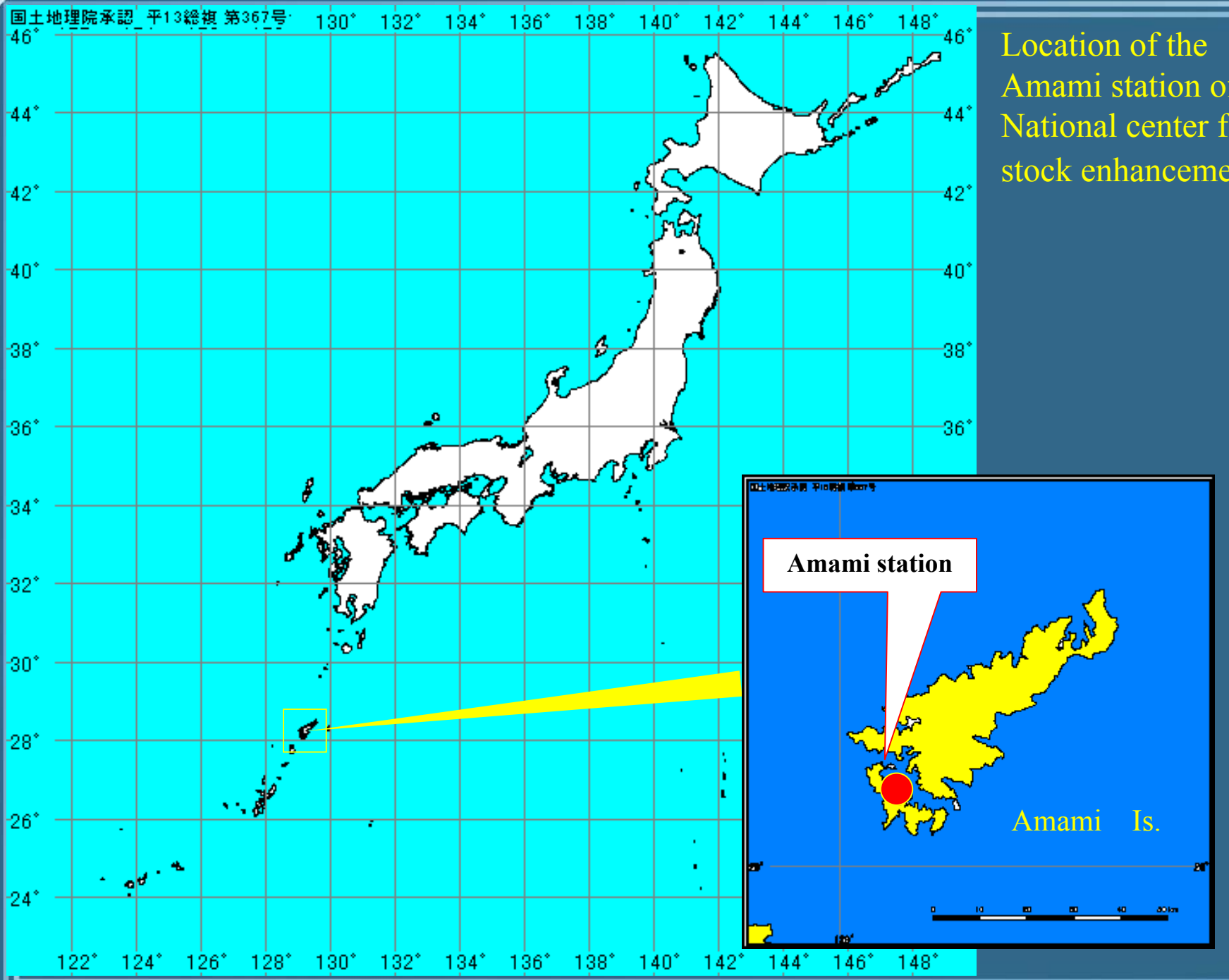


Location of the Amami station of National center for stock enhancement

Facilities of Off-shore for broodstock in Amami Station

ϕ 40m Sea Pen system

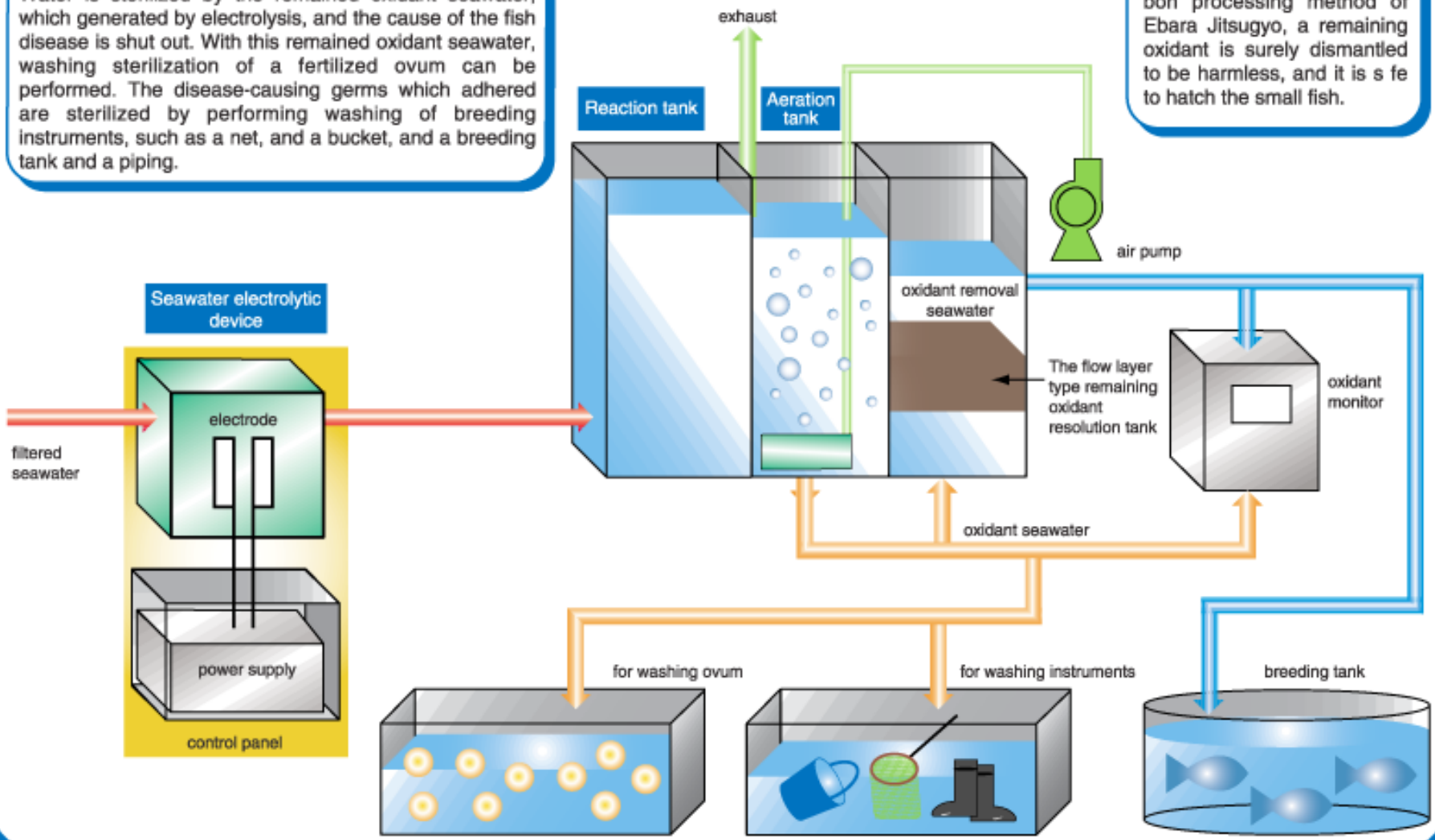
Barrier Net/Closed-Cove system (14 ha)

Tanks (50 ton) for rearing bluefin larvae

for seeding production facility

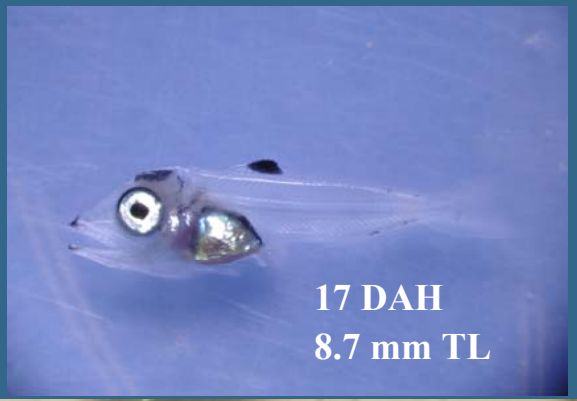
Water is sterilized by the remained oxidant seawater, which generated by electrolysis, and the cause of the fish disease is shut out. With this remained oxidant seawater, washing sterilization of a fertilized ovum can be performed. The disease-causing germs which adhered are sterilized by performing washing of breeding instruments, such as a net, and a bucket, and a breeding tank and a piping.

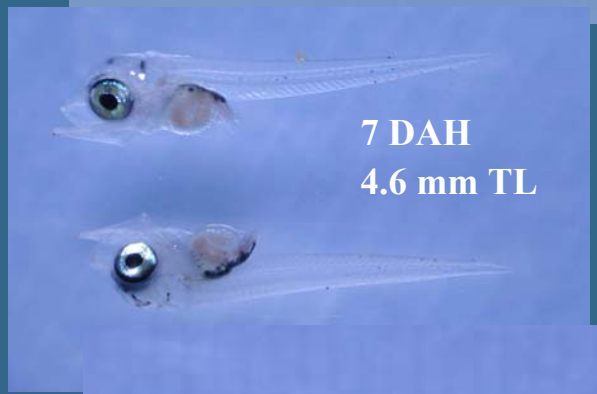
By the original activated carbon processing method of Ebara Jitsugyo, a remaining oxidant is surely dismantled to be harmless, and it is s fe to hatch the small fish.

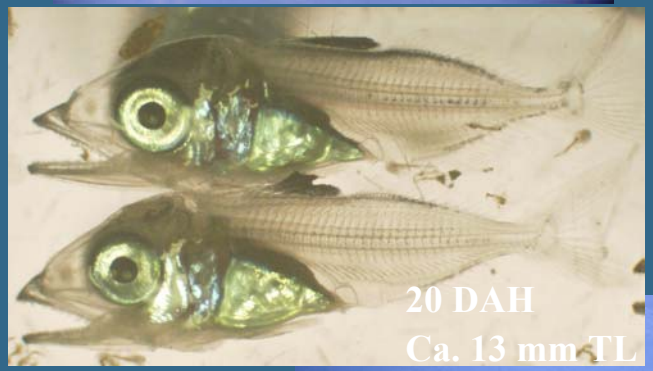


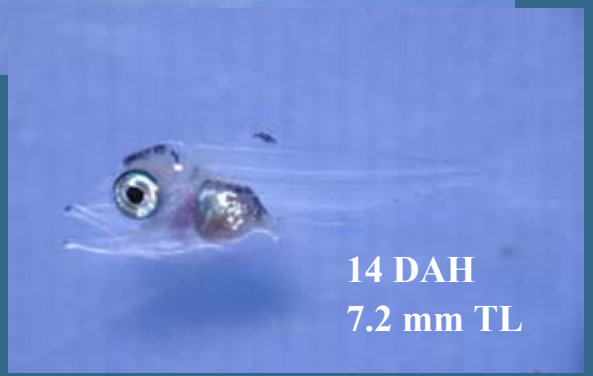
System against VNN using at Amami Center

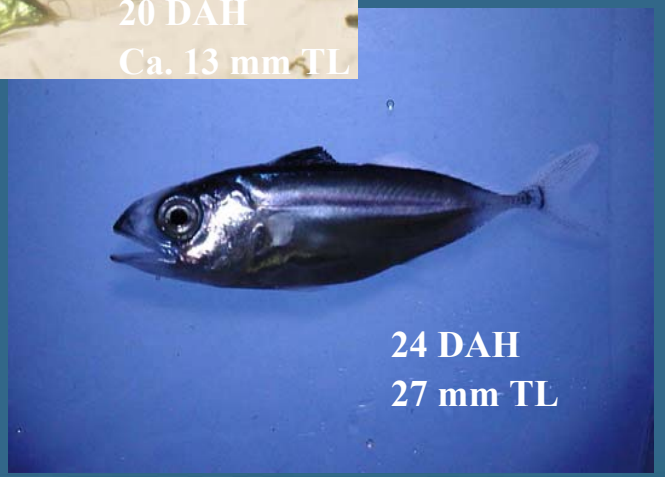
Photographs of bluefin larvae and juvenile in process of growing in tank











Problems of low survival

We sorted the problem to be resolved for us into three parts

First part : **hatching to mouth opening stage**

Egg quality, unsuitable management of egg-hatching, management of rearing water, environmental factors (WT, light intensity, O_2 etc.) etc.

Second part : **mouth opening to around tenth dah**

Unsuccessful first feeding, unsuitable food and/or insufficient nutrition, management of rearing water, environmental factors (WT, light intensity, O2 etc.) , etc.

Third part : **from around tenth dah onwards**

Insufficient nutrition, inappropriate food, cannibalism / behavior attacking others, environmental factors etc.

We decided to determine the results for progressing survival of bluefin larvae at early stage by using two methods generating a current

First part : hatching to mouth opening stage

Egg quality, unsuitable management of egg-hatching, management of rearing water, environmental factors (WT, light, O_2 etc.) etc.

Second part : mouth opening to around tenth dah

Unsuccessful first feeding, insufficient nutrition, management of rearing water , environmental factors (WT, light, O2 etc.) , inappropriate food etc.